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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/748,258	12/31/2003	Tadashi Yamaguchi	OKI 396	6985
23995	7590	01/11/2005	EXAMINER	
RABIN & Berdo, PC 1101 14TH STREET, NW SUITE 500 WASHINGTON, DC 20005			QUACH, TUAN N	
			ART UNIT	PAPER NUMBER
			2814	

DATE MAILED: 01/11/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/748,258	YAMAGUCHI, TADASHI	
	Examiner	Art Unit	
	Tuan Quach	2814	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-6 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-6 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 31 December 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. ____. |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date <u>5/4/04; 12/31/03</u> . | 6) <input type="checkbox"/> Other: ____. |

DETAILED ACTION

Claim 2 is objected to because of the following reason: "one ends" is grammatically erroneous. Correction is required.

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claim 1 is rejected under 35 U.S.C. 102(a) as being anticipated by Kimura.

Kimura (2002-093942) teaches a semiconductor device comprising a semiconductor chip 2 having an electrode pad 3 electrically connected to an integrated circuit and a conducting part 4 electrically connected to the electrode pad; a conductive pattern 5a/5b extend from a top of a front side of the insulators 6c to the conducting part of the chip. See the abstract, [0009]-[0016].

Claims 2-6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kimura taken with Horiuchi.

Kimura as applied above does not recite the first and second semiconductor devices being stacked to each other by connecting the ends of the conductive patterns of the devices through a connecting member as in claim 2 and wherein the connecting member has a bar-shaped member as in claim 3, and the ball shaped terminal as in claim 4, the first and second terminals as in claim 5 and stacking by connecting the respective terminals of the devices as in claim 6.

Horiuchi (2001/0026010) teaches connecting a plurality of semiconductor devices 105' which are connected to each other at their side surfaces. The use of connecting member 132/138 for such connection is also shown. See Fig. 34(2), [0201]-[0204]. The provision of a ball shaped terminal is also shown, e.g., 128, Fig. 32(1), [00199] wherein connection bumps are provided. The provision of the terminals and stacking of a plurality of semiconductor devices by connecting the respective terminals 28 of the plurality of semiconductor devices 140 is also shown, e.g., Fig. 11, [0105]-[0106] whereby a single semiconductor device 4 comprising a plurality of elements can be obtained.

It would have been obvious to one skilled in the art in practicing Kimura to have employed the side connection as taught by Horiuchi since such is conventional and advantageous whereby a plurality of semiconductors can be connected together in parallel as in claim 2. Regarding claim 3, it would have been obvious to one skilled in the art to have employed a connecting member of appropriate shape including bar-shaped as shown in Fig. 34(2). Regarding claim 4, it would have been obvious to one skilled in the art to have included a ball-shaped member at the tip of the connecting bar

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as shown in Horiuchi wherein the connection bumps would serve to connect the respective devices. Regarding claims 5 and 6, it would have been obvious to one skilled in the art to have further provided the respective terminals for the semiconductor devices and connecting the respective terminals to form a single device comprising stacked multilayer structures of semiconductor elements.

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Suzuki 2001/0038150 is made of record.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to examiner Quach whose telephone number (571) 272-1717. The examiner can normally be reached on M - F from 8 to 4.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor Wael Fahmy can be reached on (571) 272-1705. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (571) 272-1562.



Tuan Quach
Primary Examiner